

STUDIES OF THE GENUS *KUNZEANA*. II. EIGHT NEW SPECIES OF MEXICAN *KUNZEANA*

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In a previous paper (Ruppel and DeLong, 1951), five new species of Mexican *Kunzeana* were described. It treated those forms which have the shortest heads and in which the vertex is one-half to two-thirds as long as its basal width. Also in that group the male aedeagus has either no or few processes arising from it and these are at the middle or more apical portion of the phallicata.

The species described at this time are related to *kunzei* and also allied to *lenta*, *furcata*, and *texana*, all of which have been taken in Mexico. The male aedeagus in these species shows a greater diversity and number of aedeagus processes, many of which arise from near the base.

The types of all species described in the following descriptions are in the DeLong collection.

Kunzeana flavella n. sp.

Resembling *kunzei* (Gillette) in general form and appearance but with distinctive coloration and genitalia. Length 2.3 mm.

The vertex is bluntly rounded at its apex and its median length is about two-thirds as great as its basal width between the eyes.

Color: The vertex is light cream marked with a few irregular orange lines on its disk with a pair of large orange spots near its apex. The face is dull orange with its genae and lora dull cream. The pronotum is bright yellowish-orange bordered anteriorly with a broad ivory band which bears large orange spots. The scutellum is light cream with its apex, basal angles, and a pair of short, longitudinal, median lines orange. The elytra are bright yellow with a stripe along each claval suture, a stripe between the sectors, and the distal third of the costal margins, semi-hyaline.

Genitalia: The posterior margin of the seventh abdominal sternite of the female is nearly truncate with its lateral angles rounded. The plates, styles, and pygofer of the male are similar to those of *kunzei*. The pygofer hooks arise on the dorso-caudal angles of the pygofer and curve sharply ventrad at their apices. A pair of flat, lateral processes arise on the base of the aedeagus and extend to near the middle of the phallicata. These processes narrow suddenly near their apices and the thin apical portions extend caudo-laterally. The phallicata is rather spindle-shaped and pointed at its apex.

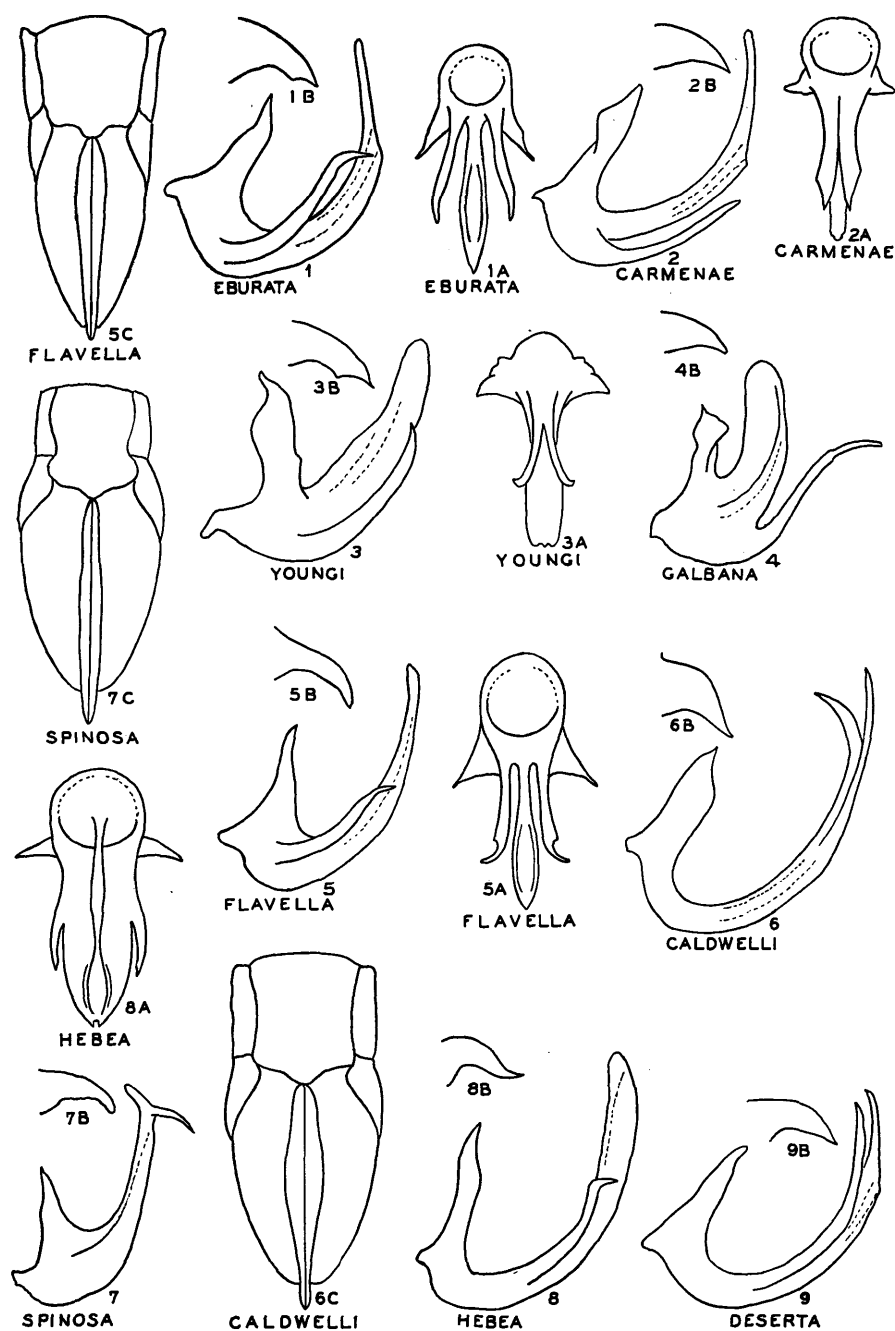
Holotype male and allotype female collected at Colima, Huerta Alvarez, Mex., Jan. 27, 1930 (M.B. 296) by Dr. Dampf; male paratype at Navajoa, Sor., March 16, 1927 (M.B. 204) by Dr. Dampf; male paratype, Iguala, G'ro., Sept. 11, 1939, by DeLong; male paratype, Mezcala, G'ro., Aug. 4, 1930, (M.F. 1935) by Parra; male paratype, Cocula, G'ro., Aug. 6, 1930, (M.F. 1753) by Dampf; male paratype, Tetela del Rio, G'ro., Aug. 13, 1930, (M.F. 1757) by Parra; male paratype Chilpancingo, G'ro., Oct. 25, 1941, by DeLong and Good; male paratypes, Chilpancingo, G'ro., July 16, 1929 (M.B. 291) by Dampf.

Kunzeana galbana n. sp.

Resembling *flavella* in general form and appearance but with distinctive male genitalia. Length 2.5 mm.

The vertex is bluntly angled at its apex and its median length is about two-thirds as great as its basal width between the eyes.

Color: The vertex is cream heavily mottled on its disk with dull orange. The face is rather dusky orange with its genae and lora dull cream. The pronotum is light yellow-green bordered



1, 2, 3, 4, 5, 6, 7, 8, 9. Aedeagus (lateral view).

1a, 2a, 3a, 5a, 8a. Aedeagus (ventral view).

1b, 2b, 3b, 4b, 5b, 6b, 7b, 8b, 9b. Pygofer hook (lateral view).

5c, 6c, 7c. Female seventh sternite and pygofers.

anteriorly with an ivory band which bears about six elongate, longitudinal spots. The scutellum is dull ivory with a pair of short, median, longitudinal lines, its apex, and its basal angles, orange. The elytra are bright yellow with the margins of the clavus and the apical cells semi-hyaline.

Genitalia: The plates, styles, and pygofer of the male are similar to those of *flavella*. The pygofer hooks arise on the dorso-caudal angles of the pygofer and are rather broad and blunt. The base of the aedeagus is long and broad with its dorsal processes rather thick. A long, recurved, ventral process arises on the base and extends dorso-caudad. The phallicata is broad at its base and tapers to its rounded apex.

Holotype male and male paratype collected at Balsas, G'ro., Dec. 11, 1929 (M.F. 1501) by Dr. Dampf; male paratype, Mezcala, G'ro., Dec. 13, 1929 (M.F. 1512) by Dampf; male paratype, Paso de Ixtla, Mor., July 30, 1930 (M.F. 1738) by J. Parra.

***Kunzeana eburata* n. sp.**

Resembling *flavella* in general form and appearance but with distinctive genitalia. Length 2.3 mm.

The head is bluntly rounded at its apex with its median length about two-thirds as great as its basal width between the eyes.

Color: The vertex is light cream marked with fine, irregular orange lines on its disk and with a pair of large orange spots near its apex. The face is light tan with its genae and lora light cream. The pronotum is dull greenish-yellow bordered anteriorly with a broad ivory band which bears some elongate orange spots. The scutellum is ivory with its apex, basal angles, and a pair of small spots on its disks, light orange. The elytra are translucent yellowish orange with their apical halves semi-hyaline.

Genitalia: The plates, styles, and pygofer of the male are similar to those of *flavella*. The pygofer hooks arise on the dorso-caudal angle of the pygofer, and are sharply pointed and recurved. A pair of lateral processes, widely separated at their bases, arise on the base of the aedeagus and extend to near the middle of the phallicata. These processes extend parallel to the phallicata to near their apices where they turn suddenly caudad. The phallicata is moderately broad and somewhat spindle-shaped.

Holotype male and male paratypes collected at San Geronimo, G'ro., Aug. 30, 1930 (M.F. 1787) by J. Parra; male paratype, Cuernavaca, Mor., Sept. 11, 1939, by DeLong and Plummer; Zincauro, G'ro., Sept. 2, 1930 (M.F. 1789) by Parra; Pungarabato, G'ro., Aug. 30, 1930 (M.F. 1769) by Parra; Iguala, G'ro., Sept. 11, 1939, by DeLong; Coyoca-Catalan, G'ro., Aug. 24, 1930 (M.F. 1771) by Parra; Iguala, G'ro., Oct. 25, 1941, by DeLong and Good; Chilpancingo, G'ro., Oct. 25, 1941, by DeLong, Good, Caldwell, and Plummer; Balsas, G'ro., Dec. 11, 1929 (M.F. 1501) by Dampf.

***Kunzeana caldwelli* n. sp.**

Resembling *kunzei* (Gillette) in general form and appearance but with distinctive coloration and genitalia. Length 2.4 mm.

The vertex is rounded at its apex and its median length is about two-thirds as great as its basal width between the eyes.

Color: The vertex is cream bordered anteriorly with a dull ivory band and mottled on its disk with light orange markings. The face is dusky tan with its genae and lora cream. The pronotum is yellowish green with a narrow, light orange band and scattered cream spots on its anterior margin. The scutellum is reddish-orange. The elytra are semi-hyaline with the veins and the disk of each clavus and corium, golden yellow. The elytra of the allotype female differs from the others in the series at hand in being rosy red with semi-hyaline apical cells.

Genitalia: The posterior margin of the seventh abdominal sternite of the female is nearly truncate with its median quarter produced into a short lobe. The plates, styles, and pygofer of the male are similar to those of *kunzei*. The pygofer hooks arise on the dorso-caudal angle of the pygofer, are strongly curved and sharply pointed. A pair of thin, sharply pointed ventro-lateral processes arise near the middle of the phallicata and extend parallel to the phallicata to slightly above its apex. The phallicata is long and slender.

Holotype male, allotype female, male and female paratypes collected at Valles, S. L. P., Sept. 24, 1941, by DeLong, Good, Caldwell, and Plummer.

***Kunzeana youngi* n. sp.**

Resembling *texana* (Beamer) in form and general appearance but with distinctive genitalia. Length 2.7 mm.

The vertex is produced for about one-half of its length in front of the eyes, its anterior margin is bluntly angled at the apex, and its median length is about two-thirds as great as its basal width between the eyes.

Color: The vertex is cream bordered anteriorly with a broad, ivory band and mottled on its disk with dull orange markings. The face is brownish orange with its genae and lora dull cream. The pronotum is golden orange bordered anteriorly with a broad, ivory band which bears large orange spots. The scutellum is dull ivory with its apex and basal angles orange brown. The elytra are semi-hyaline with translucent, yellowish-orange stripes along their costal margins and veins.

Genitalia: The plates, styles, and pygofers of the male are similar to those of *texana*. The base of the aedeagus is moderately broad with its dorsal processes rather thick. The phallicata is rather thick at its base and tapers to a narrow, blunt apex and bears a pair of short, thin ventro-lateral processes closely appressed to its basal half.

Holotype male collected at Hacienda Fresno, Coah., June 11, 1931 (M.B. 328) by Dr. Dampf. The authors wish to express their gratitude to Mr. David A. Young for the "checking with types" of this and other material which were sent to him.

***Kunzeana hebea* n. sp.**

Resembling *kunzei* (Gillette) in form and general appearance but much drabber in coloration and with distinctive genitalia. Length 2.5 mm.

The vertex is bluntly rounded at its apex with its median length about two-thirds as great as its basal width between the eyes.

Color: The vertex is dark cream bordered anteriorly with a broad ivory band and heavily mottled on its disk with orange tan markings. The face is light tan with its genae and lora cream. The pronotum is dull orange-brown bordered anteriorly with a dull ivory band which bears scattered, dull orange spots. The scutellum is cream with its apex, basal angles, and its disk, dull orange. The elytra are dull orange on their basal half with their distal half smoky.

Genitalia: The plates, styles, and pygofers of the male are similar to those of *kunzei*. The sharply pointed, recurved pygofer hooks arise on the dorso-caudal angles of the pygofers. A pair of thin, lateral processes arise on the base of the aedeagus and extend to near the distal third of the phallicata. These processes parallel the phallicata to near the apices where they turn suddenly caudad to terminate in sharply pointed apices. The phallicata is broad and flat and tapers to a pointed apex.

Holotype male and male paratypes collected at Iguala, G'ro., Sept. 11, 1939, by D. M. DeLong; male paratypes, Iguala, G'ro., Oct. 25, 1941, by DeLong and Good; male paratype, Arcelia, G'ro., Aug. 19, 1930 (M.F. 1760) by J. Parra.

***Kunzeana deserta* n. sp.**

Resembling *hebea* in general form but with distinctive coloration and genitalia. Length 2.3 mm.

The vertex is broadly rounded on its anterior margin and its median length is about two-thirds as great as its basal width between the eyes.

Color: The vertex is orange-red bordered anteriorly with a broad, dull ivory band and with a cream spot near the middle of the inner margin of each eye. The face is orange-tan with the genae and lora dull cream. The pronotum is reddish-orange with a narrow, dull orange band and a few ivory spots along its anterior margin. The scutellum is orange-red. The elytra are golden orange with their apical cells and the distal third of their costal margins, semi-hyaline.

Genitalia: The plates, styles, and pygofers of the male are similar to those of *hebea*. The pygofer hooks arise on the dorso-caudal angles of the pygofers, are strongly curved, and taper from thick bases to sharply-pointed apices. A pair of thin, sharply pointed, lateral processes arise near the base of the phallicata and extend parallel to the phallicata to near its apex. The phallicata is long and slender.

Holotype male collected at Granja Experimental Rodriguez, Nuevo Leon, June 5, 1931 (M.F. 2029) by Dr. Dampf.

***Kunzeana carmenae* n. sp.**

Resembling *hebea* in general form but with distinctive coloration and genitalia. Length 2.5 mm.

The vertex is broadly rounded on its anterior margin and its median length is about two-thirds as great as its basal width between the eyes.

Color: The vertex is reddish orange bordered anteriorly with a broad ivory band and flecked on its disk with a few ivory spots. The face is orange tan with its genae and lora dull cream. The pronotum is greenish-yellow bordered anteriorly with a dull orange band which bears small, scattered, cream spots. The scutellum is dull orange. The elytra are yellowish orange with a stripe along each claval suture and their apical cells, semi-hyaline.

Genitalia: The plates, styles, and pygofer of the male are similar to those of *hebea*. The pygofer hooks arise on the dorso-caudal angle of the pygofer and are rather thick. The base of the aedeagus is rather long and broad with its dorsal processes long. A pair of thin, ventro-lateral processes arise on the base and extend caudad to near the middle of the phallicata. The phallicata is long and slender.

Holotype male collected at Carmen, Camp., Jan. 24, 1939 (M.F. 8398) by Dr. Dampf; male paratype Tierra Blanca, Veracruz, July 29, 1932 (M.F. 2655) by Dampf.

***Kunzeana spinosa* n. sp.**

Resembling *kunzei* (Gillette) in form and general appearance, but with distinctive coloration and genitalia. Length 2.5 mm.

The vertex is produced for about one-half of its length in front of the eyes, its anterior margin is rounded, and its median length is about two-thirds as great as its basal width between the eyes.

Color: The vertex is dull ivory marked with irregular orange lines. The face is brownish-orange with a bluish bloom on its lower portion. The pronotum is dull yellowish-orange bordered anteriorly with a broad ivory band which bears large, orange spots. The scutellum is dull ivory with its apex and basal angles yellowish-orange. The elytra are golden yellow with the margins of each clavus, the areas between the first and second sectors, and the apical cells, semi-hyaline.

Genitalia: The posterior margin of the seventh abdominal sternite of the female is conically produced into a sharply pointed lobe. The plates, styles, and pygofer of the male are similar to those of *kunzei*. The pygofer hooks arise on the dorso-caudal angle of the pygofer and taper from their thick bases to sharply pointed apices. The base of the aedeagus is rather narrow with its dorsal processes long, thin, and widely separated at their apices. The phallicata is rather slender and bears a pair of terminal, sharply pointed processes.

Holotype male, allotype female, male and female paratypes collected at Rancho Monter, Oax., Dec. 16, 1937 (M.F. 6403) by Dr. Dampf.

REFERENCE

Ruppel, R. F., and D. M. DeLong. 1951. Studies of the genus *Kunzeana*. I. Ohio Jour. Sci., 51: 187-191.